UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center – 1600 John F Kennedy Blvd
Philadelphia, Pennsylvania 19103-2852

Report Title: Clean Air Act Inspection of Aggregate Industries
Inspection Date(s): 12/08/2022
Regulatory Program(s): NSPS, SIP

Company Name: Aggregate Industries
Facility Name: Aggregate Industries- Kirby Road Asphalt Facility
Facility Location: 5411 Kirby Road
Clinton, MD 20735
Latitude: 38.78183 **Longitude:** -76.91517
County/Parish: Prince George County

AFS Number: MD0000002403300002
Permit Number: #033-0002
NAICS Code: 324121 **SIC:** N/A
Unique Project #: 3E23CA030A

Facility Representatives: **Point of Contact**

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Paul Arnold **Date**

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Aggregate Industries- Kirby Road Asphalt Facility (Aggregate or Facility) to verify compliance with applicable State and Federal regulations. The Maryland Department of the Environment (MDE) was notified of the inspection on November 30, 2022, via email. On December 5, 2022, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Vilder Gomez, of Aggregate Industries, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

A. Summary of the Facility

The Facility is located at 5411 Kirby Road, Clinton, MD 20735. Aggregate Industries began operating as a hot mix asphalt production facility at this location in 1997. Prior to that the Facility was owned in the 1950's by Conti, followed by Bates Paving in the 1970s, and Prince George's Contractors in the 1980s. Aggregate Industries purchased the facility in the 1990s and started operations as a batch manufacturing asphalt plant, the plant was converted in 1997 to a drum mix asphalt plant, equipped with a cyclone and baghouse. The facility representative, Mr. Tim Bevard, Advisor, stated that Aggregate Industries occupies a total of eight acres at this location and that they are owned by Holcim, Inc. The main area office is located in Greenbelt, MD. There are currently 10 full-time employees, and the typical hours of operation are 6:00 am to 4:00 pm Monday to Friday, however, business demands occasionally require them to add a night shift.

The Facility received a Synthetic Minor source permit (Permit #033-0002) on September 1, 2021, from MDE, the permit expires on August 31, 2026.

The Facility is subject to, or potentially subject to the following federal regulations:

- 40 CFR Part 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants
- 40 CFR Part 60 Subpart I – Standards of Performance for Hot Mix Asphalt Facilities

B. Inspection Opening Conference

At 9:01 am on December 8, 2022, EPA inspectors Stafford Stewart and Bruce Augustine arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Aggregate Industries was represented by Timothy Bevard, Bobby Bean, Hakeem Bridgewater, and Kathryn Gunkel. Andrew Bena, MDE Inspector, was also present. EPA inspectors presented their credentials and explained the purpose of the visit was to conduct a Clean Air Act inspection to determine compliance with their permit and any applicable regulations. Additionally, EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Aggregate Industries did not claim any photos or documentation as CBI.

II. Site Activity/Process Description

Aggregate Industries is a hot mix asphalt (HMA) manufacturing plant. EPA inspectors asked if the Facility was affiliated with any other company, Mr. Bevard stated that they are owned by Holcim, Inc. The Facility operates a 318 ton per hour (tph) double barrel drum asphalt plant that is equipped with an Astec cyclone and baghouse. The double barrel design allows for a rotating inner drum and a stationary outer drum. Raw materials consist primarily of aggregate, stone, and sand. Ninety percent of the raw material are trucked in from railyards, Vulcan Materials Company supplies less than 10%. The raw material stone is classified as #8 (3/8 and ½ inch), and #9 (3/4 inch). Additionally, #10 stone, which is referred to as screenings or dust, is also used for making pavers and concrete blocks. The remaining raw material consists of recycled asphalt paving (RAP) material. RAP is asphalt millings, the material produced from the milling of roads before repaving, and pieces of asphaltic roadway pavement removed from the roadway surface or subbase, or from other asphalt-paved surfaces such as parking lots. RAP is crushed on site before processing. Raw materials are housed in nine cold feed storage bins, and two RAP bins. There are six finished product silos which contain hot mix, three of these silos are used for storage of the hot mix and are heated, the other three silos contain material for daily use. The aggregate used as raw material is mixed according to the desired specification in the control room, the "loader man" is responsible for ensuring the correct mix is attained prior to processing. Some of the raw material introduced for processing is "virgin" aggregate, while some contains a percentage of RAP. The highest amount of RAP used is 38%. By permit, the raw material feed is allowed to contain up to 40% RAP. Raw materials for the specific product are fed onto a conveyor. Raw materials enter the inner drum, where they are mixed and moved by gravity towards a burner for drying. The dried material falls through openings into the outer drum. The material is then mixed with liquid asphalt and is discharged into a chute as finished product. When RAP is used it is introduced in the outer chamber of the double barrel with the liquid asphalt and emerges as HMA which is directed to the appropriate silo before being shipped out by trucks to the customer. Aggregate Industries purchase approximately 70% of the finished products and about 30% is sold to Freight on Board (FOB) customers for driveway, parking lots, and local road pavers. FOB customers provide their own trucks for shipping out purchased products. The Facility's throughput depends on the season and construction demand. The facility's representative, Tim Bevard stated that current production levels at the time of the inspection was 220 tons per hour (tph), but the production range is 200 tph to 300 tph. Normally the operational throughput is maximum during the months of April to October.

A "pulse jet" type baghouse is used to control particulate emissions from the asphalt plant. Exhaust gases from the double barrel counter-flow drum mix HMA plant vents through the baghouse before discharging to the atmosphere, dusts from the dryer are also collected by the baghouse and are returned to the process to be blended with asphalt cement before introduction into the mix drum. Timed "pulses" of compressed air are used to remove the particulate matter

that is collected on the external surface of the bag/filter where it commonly forms into a cake of dust. The baghouse contains 1200 bags and have an internal diameter (ID) of six inches to accommodate a horizontal cyclone. The cyclone performs a pre-cleaning function by removing larger particles before they reach the baghouse. All material from the baghouse is recycled, the dust collected is returned to be blended with asphalt cement before being re-introduced into the mixing drum. Each compartment in the baghouse is equipped with a dedicated pressure drop recorder, there is also a magnehelic gauge with an alarm which sounds to alert the operator in the control room if the set point, which ranges from two ins H_2O to seven ins H_2O, is exceeded. The baghouse is preheated to at least 212 ^{0}F before production runs. Fugitive dusts generated on site are controlled by a water truck, which operates as needed.

Aggregate Industries operates a 300tph portable crusher and screen plant that is dedicated to sizing the RAP before production. The portable crusher and screening plant is equipped with a wet suppression system to limit fugitive emissions. EPA inspectors asked the Facility representatives if the 150 tph and 350 tph portable RAP crushing and screening plants listed in the permit are also in operation, Tim Bevard stated that they are currently not in use at this site and that the portable crushing plants rotate amongst several Aggregate Industries facilities. EPA inspectors also inquired if Aggregate Industries operates any emergency generators, engines, or other combustion sources on site. Tim Bevard stated that there are no emergency generators, there is a 1.2 MMBtu per hour natural gas fired hot oil heater which is used to heat the contents of the liquid asphalt tank. The only other combustion source are propane fired heaters used to provide comfort heat. There is a 10,000-gallon diesel tank onsite that is used to fuel the offroad engines used on site. EPA inspectors also inquired about the use of parts washers; Mr. Tim Bevard stated that there are none on site and that they use an outside company to manage used solvents.

The opening conference concluded at 10:25 am.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 10:26 am by Tim Bevard and Bobby Bean of Aggregate Industries, Andrew Bena of MDE was also present for the walkthrough. EPA inspectors noted photos would be taken during the Facility walkthrough and that emission points at the facility would be observed with a Forward Looking Infrared (FLIR) Model GF320 camera. The FLIR camera is used to observe potential hydrocarbon emissions from sources that are not visible to the naked eye. (Attachment 2).

The plant tour began with an inspection of the nine raw material cold feed bins. The inspection team was able to observe aggregate being dropped onto a belt from the cold feed bins, where it is conveyed by gravity to the dryer prior to processing. The inspection team then observed the baghouse followed by an inspection of the used oil tank; the used oil is generated from production. The HMA plant and hot oil heater was then inspected, the inspection team was able to observe finished product being conveyed to silos for storage. The double barrel counterflow

drum mix (HMA) plant was then inspected. Tim Bevard explained that aggregate (RM) enters the rotating inner drum is dried then falls through openings onto the outer drum where it is mixed with hot liquid asphalt, the liquid asphalt is injected in the outer drum and flows in the opposite direction to the aggregate. EPA observed the liquid asphalt injection ports on the HMA plant. RAP is used in the outer drum with the hot liquid asphalt and is heated by the hot liquid. The inspection team was able to observe liquid asphalt and RAP being introduced into the mixing drum. Gases from the HMA plant exhaust through a duct at the opposite of the raw material entry and are routed to the baghouse. The inspection team then proceeded to the 30,000-gallon silo that stores the asphalt cement that is used as binding material in the production process. Adjacent to the HMA plant, the inspection team was able to observe raw materials that consisted of #7 and #8 RAP stored in bins.

The inspection team proceeded to another section of the plant to observe the portable McCloskey Crusher and Screening Plant for the sizing of RAP. The portable crushing and screening plant observed was not operating during the time of the inspection. Tim Bevard explained to the inspection team that RAP is pre-screened, taken by dump trucks to a hopper, and is conveyed to be crushed to the required size, it is then discharged to a stacker and stockpiled. RAP is trucked to the production area as needed; all RAP is used by Aggregate Industries in the production process. The three vertical storage silos for the HMA and the 1.2 MMBTU/hr rated hot oil heater (HOH) was then inspected, the HOH ensures that the temperature of the HMA in the heated silos are kept at a minimum of 300 ^{0}F.

The inspection team visited the control room where the temperature of the baghouse obtained from a probe in the stack was observed to be 230 ^{0}F, the discharge temperature of the HMA was also observed to be 303.8^{0}F, the permit requirements is that it should be less than 350^{0}F. The pressure drop across the baghouse was being monitored continually and was observed to be 3”H_2O at the time of the inspection. Other operational parameters observed were amounts of HMA being produced, which was 215.3 tph, and the amounts of aggregate and RAP being used, which were 122.1 tph and 81.9 tph respectively.

EPA inspector Bruce Augustine started the FLIR camera at 11:25 am to observe emission sources for hydrocarbons, while inspector Stafford Stewart proceeded to the office to begin the records review.

The walkthrough, including the FLIR walkthrough, concluded at 11:59 am.

IV. Records Review

The records review commenced at 11:35 am. EPA inspectors reviewed documents requested in the December 5, 2022, email to Vilder Gomez (see Attachment 1). Records were provided at the time of the inspection by Tim Bevard and Kathryn Gunkel. Below are the records requested and what was provided:

1. Process flow diagram and plot plan. *The Facility provided a copy of the process flow block diagram and the asphalt double barrel counter-flow mix plant.*
2. A list of all air emissions sources and corresponding dates of installation. *Records were provided to show all emission sources on site.*
3. A list of all volatile organic compound (VOC) emitting sources. *Annual emissions report records from calendar year 2021 were reviewed for VOC emitting sources.*
4. A list of all hazardous air pollutant (HAP) emitting sources. *A list of HAP sources was provided and the air toxics report of 3/28/22 was reviewed.*
5. A list of all applicable NESHAP or NSPS regulations for your air emission source(s). *Information on all applicable NSPS Clean Air Act regulations were provided and are mentioned above in this report. The information provided stated that there are no applicable NESHAP*
6. The results of leak detection tests performed on the baghouse for the past 5 years. *Records of the annual black leak tests conducted at the baghouse were provided for review. Records reviewed demonstrated that the facility was in compliance with the particulate matter (PM) limit of 0.03 grains per dry standard cubic feet (gr/dscf). The September 1997 stack test PM emission rate from the average of three runs was 0.002 gr/dscf.*
7. The daily and monthly amounts in tons of hot mix asphalt (HMA) produced for the past 5 years. *Daily and monthly HMA production records for calendar year 2018 were provided for review.*
8. The percentage of recycled asphalt paving (RAP) used in each mix produced for the past 5 years. *Records were provided to show that RAP usage records for the past 5 years are being maintained.*
9. The mix temperature of the HMA when RAP is used in the mix and the pressure drop across the baghouse for the past 5 years. *Records were provided to show that HMA temperatures when RAP is used for the past 5 years are being maintained.*
10. The amount and types of fuels burned in the HMA plant and the asphalt heater each month for the past 5 years. *Records were provided to show the amount and types of fuels used in the HMA plant and asphalt heater for the past 5 years are being maintained.*
11. The amount of RAP processed by each RAP plant in tons per month for the past 5 years. *Records were provided to show that the amounts of RAP processed for the past 5 years are being maintained.*
12. The hours of operation of each engine associated with a RAP plant each month for the past 5 years. *Records were provided to show the hours of operation of each engine associated with the RAP plant for the past 5 years are being maintained.*

13. The amount of diesel fuel burned in each engine each month for the past 5 years. *Records were provided to show the amount of diesel fuel burned in each engine each month for the past 5 years.*
14. All opacity observation test results for the past 5 years. ***These records were not provided.***
15. Records of periodic inspection for the past 5 years of the wet suppression system for all processing plants modified or reconstructed after April 22, 2008. ***These records were not made available for review.***
16. Annual certifications of emissions for the past 5 years. *Annual certifications of emissions reports were reviewed for calendar year 2021, these records are being maintained for 5 years.*
17. Annual certifications of the results of analysis of emissions of toxic air pollutants for the past 5 years. *Annual certifications of toxic air pollutants were reviewed for calendar year 2021, these records are being maintained for 5 years.*
18. Any reports of occurrences of excess emissions for the past 5 years. *The Facility representatives Tim Bevard and Kathryn Gunkel stated that there were no occurrences of excess emissions for the past 5 years.*

V. Closing Conference

After the records review, EPA inspectors along with Tim Bevard, Hakeem Bridgewater and Bobby Bean of Aggregate Industries and the Facility's Environmental Consultant Kathryn Gunkel, had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final reports do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 12:20 pm.

The following have been identified as *potential* issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by Aggregate Industries.

- Records of periodic inspections of the wet suppression system associated with the 300 tph RAP crusher and screening plant for the control of fugitive emissions were not provided upon request for review. 40 CFR § 60.674 (b) Monitoring of operations- requires monthly inspections of wet suppression systems.
- Records of opacity tests to demonstrate compliance with opacity limits for the baghouse associated with the HMA plant and the 300 tph RAP crushing and screening plant were not provided for review upon request. 40 CFR § 60.674 (c) Monitoring of operations- requires quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, appendix A-7). The Method 22 (40 CFR part 60, appendix A-7) test shall be conducted while the baghouse is operating. 40 CFR § 60.672 (b) - Standards for Particulate Matter – states that affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 of this subpart within 60 days after achieving the

maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11. Table 3 states that the opacity limits for screening and crushers in operation after April 22, 2008, shall be seven percent opacity and 12 percent opacity respectively. The 300 tph RAP crushing and screening plant was placed into operations in 2021.

VI. List of Attachments

Attachment 1:	Email correspondence to Vilder Gomez of records requested to review during inspection
Attachment 2:	Photo Log:RIMG0239 – RIMG0251
Attachment 3:	FLIR Log: MOV 0463, MOV 0464